

# 6DX8

## High-Mu Triode— Sharp-Cutoff Pentode

### 9-PIN MINIATURE TYPE

#### GENERAL DATA

##### Electrical:

##### Heater Characteristics and Ratings (*Design-Center Values*):

Voltage (AC or DC) . . . . .  $6.3 \pm 0.6$  volts  
Current at heater volts = 6.3 . . . . . 0.720 amp  
Peak heater-cathode voltage  
(Each unit):

Heater negative with  
respect to cathode . . . . . 200 max. volts  
Heater positive with  
respect to cathode . . . . . 200 max. volts

##### Direct Interelectrode Capacitances:<sup>a</sup>

##### Triode Unit:

Grid to plate . . . . . 2.7  $\mu\text{f}$   
Grid to all other elements  
except plate . . . . . 4.0  $\mu\text{f}$   
Plate to all other elements  
except grid . . . . . 2.3  $\mu\text{f}$   
Grid to heater . . . . . 0.1 max.  $\mu\text{f}$

##### Pentode Unit:

Grid No.1 to plate . . . . . 0.1 max.  $\mu\text{f}$   
Grid No.1 to all other elements  
except plate . . . . . 9.0  $\mu\text{f}$   
Plate to all other elements  
except grid No.1 . . . . . 4.5  $\mu\text{f}$   
Grid No.1 to heater . . . . . 0.1 max.  $\mu\text{f}$   
Triode plate to pentode grid No.1 . . . . . 0.01 max.  $\mu\text{f}$   
Triode grid to pentode grid No.1 . . . . . 0.01 max.  $\mu\text{f}$

##### Characteristics, Class A<sub>1</sub> Amplifier:

	Triode Unit	Pentode Unit			
Plate Voltage . . . . .	200	170	200	220	volts
Grid-No.2 Voltage . . . . .	—	170	200	220	volts
Grid-No.1 Voltage . . . . .	-1.7	-2.1	-2.9	-3.4	volts
Amplification Factor . . . . .	65	—	—	—	
Mu Factor, Grid No.2 to Grid No.1 . . . . .	—	36	36	36	
Plate Resistance (Approx.) . . . . .	—	0.1	0.13	0.15	megohm
Transconductance . . . . .	4000	11000	10400	10000	$\mu\text{mhos}$
Plate Current . . . . .	3	18	18	18	ma
Grid-No.2 Current . . . . .	—	3	3	3	ma

##### Mechanical:

Operating Position . . . . . Any  
Type of Cathodes . . . . . Coated Unipotential  
Maximum Overall Length . . . . . 2-5/8"  
Maximum Seated Length . . . . . 2-3/8"



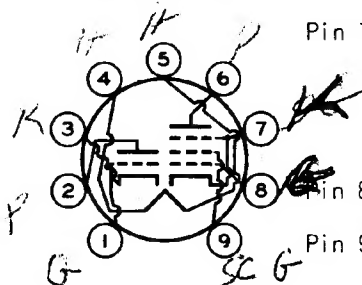
RADIO CORPORATION OF AMERICA  
Electron Tube Division  
Harrison, N. J.

DATA  
9-62

# 6DX8

Length, Base Seat to Bulb Top (Excluding tip) . . . 2"  $\pm$  3/32"  
 Diameter . . . . . 0.750" to 0.875"  
 Dimensional Outline . . . . . See *General Section*  
 Bulb . . . . . T6-1/2  
 Base . . . . . Small-Button Noval 9-Pin (JEDEC No.E9-1)  
 Basing Designation for BOTTOM VIEW. . . . . 9HX

Pin 1-Triode  
 Grid  
 Pin 2-Triode  
 Plate  
 Pin 3-Triode  
 Cathode  
 Pin 4-Heater  
 Pin 5-Heater  
 Pin 6-Pentode  
 Plate



Pin 7-Pentode  
 Grid No.3,  
 Pentode  
 Cathode,  
 Internal  
 Shield  
 Pin 8-Pentode  
 Grid No.1  
 Pin 9-Pentode  
 Grid No.2

## AMPLIFIER — Class A<sub>1</sub>

### Maximum Ratings, Design-Center Values:

	Triode Unit	Pentode Unit	
PLATE SUPPLY VOLTAGE . . . . .	550 max.	550 max.	volts
PEAK PLATE VOLTAGE with maximum plate ma. = 0.1 <sup>b</sup> . . . . .	600 max.	—	volts
PLATE VOLTAGE . . . . .	300 max.	300 max.	volts
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE . . . . .	—	550 max.	volts
GRID-No.2 VOLTAGE . . . . .	—	300 max.	volts
CATHODE CURRENT . . . . .	12 max.	40 max.	ma
GRID-No.2 INPUT . . . . .	—	1.7 max.	watts
PLATE DISSIPATION . . . . .	1 max.	4 max.	watts

### Typical Operation (Pentode Unit):

#### As video-output tube

Plate Supply Voltage . . . . .	170	200	220	volts
Series Plate Resistor . . . . .	3000	3000	3000	ohms
Grid-No.2 Voltage . . . . .	170	200	220	volts
Grid-No.1 Voltage . . . . .	-2	-2.8	-3.3	volts
Transconductance . . . . .	10400	10000	9700	$\mu$ mhos
Plate Current . . . . .	18	18	18	ma
Grid-No.2 Current . . . . .	3.2	3.1	3.1	ma

### Maximum Circuit Values:

	Triode Unit	Pentode Unit	
Grid-No.1-Circuit Resistance: For fixed-bias operation . . . . .	1 max.	1 max.	megohm
For cathode-bias operation . . . . .	3 max.	2 max.	megohms

<sup>a</sup> Without external shield.

<sup>b</sup> With duty factor = 0.18 maximum and pulse duration = 18 microseconds maximum.

